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Wisconsin Department of Agriculture, Trade & Consumer Protection

Wisconsin Pest Bulletin

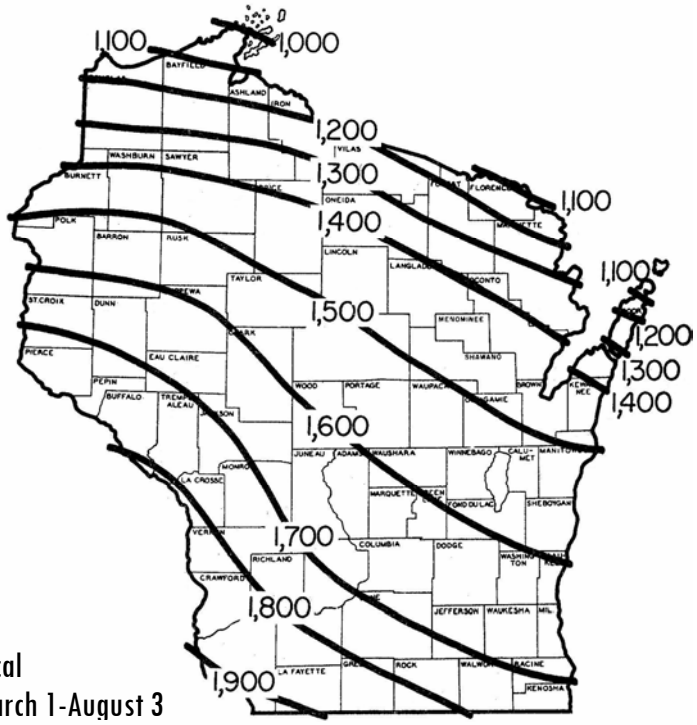
PO Box 8911 • Madison, WI 53718 • Phone 1-800-462-2803 • Fax: 608-224-4656

Your weekly source for crop pest news, first alerts, and growing season conditions for Wisconsin

Weather and Pests

Scattered, heavy rainfall in the last week broke the drought that has stressed Northern Wisconsin field crops for several weeks, but the prolonged period of dry weather already caused irreparable damage to corn and soybean yields. An estimated 30-60% of corn and soybeans in the northern regions were lost, and most third crop alfalfa was not able to recover. In response, the Governor asked that 19 Northern Wisconsin Cos. be declared disaster areas due to the summer drought conditions.

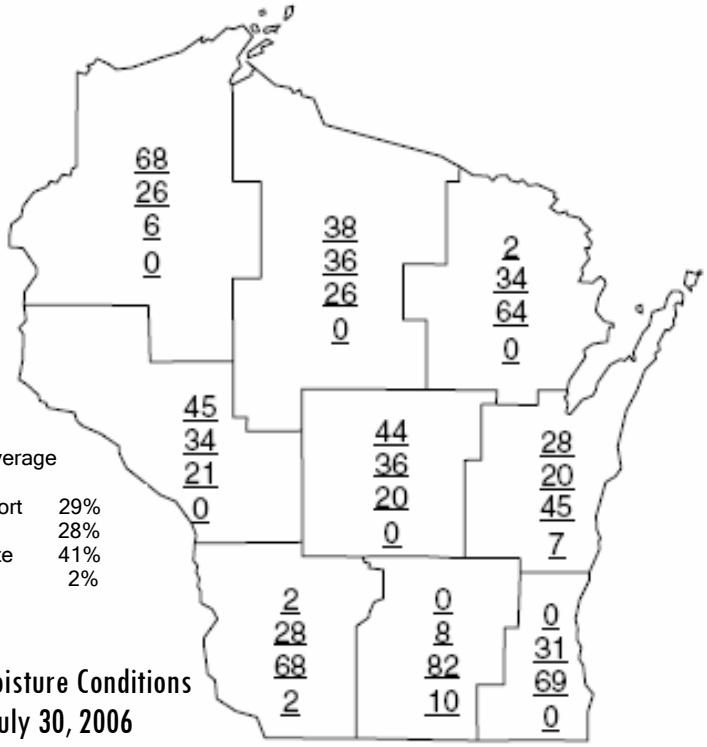
The stifling heat and humidity had a favorable effect on crops and insects, accelerating the development of both in the past week. As of July 31, approximately 48% of the state's soybeans had set pods, a rate equivalent to the 2005 average and well above the five-year average of 25%. Corn height is



Historical
GDD March 1-August 3

Growing Degree Days through 8/03/06 were

	GDD 50F	5-yr Ave	Sine 48F	40F
Dubuque, IA	1858	1834	1792	2987
Lone Rock	1801	1764	1726	2906
Beloit	1934	1828	1839	3103
Madison	1757	1740	1757	2865
Sullivan	1787	1740	1692	2930
Juneau	1685	1699	1635	2801
Waukesha	1682	1667	1611	2807
Hartford	1668	1649	1600	2789
Racine	1648	1604	1589	2776
Milwaukee	1659	1584	1574	2785
Appleton	1695	1565	1586	2823
Green Bay	1585	1447	1561	2686
Big Flats	1769	1679	1606	2883
Hancock	1737	1787	1608	2844
Port Edwards	1777	1599	1613	2905
La Crosse	1999	1850	1801	3204
Eau Claire	1948	1730	1784	3141
Cumberland	1715	1506	1642	2815
Bayfield	1375	1160	1358	2372
Wausau	1582	1444	1501	2632
Medford	1599	1410	1528	2657
Crivitz	1525	1368	1477	2595
Crandon	1425	1305	1359	2409



State Average

Very Short	29%
Short	28%
Adequate	41%
Surplus	2%

Soil Moisture Conditions
as of July 30, 2006

estimated to be one inch taller than last year at this time, and about three inches above the five-year average of 73 inches. The third cutting alfalfa was 13% complete, above last year's average of 2% according to the Wisconsin Field Office of USDA's National Agricultural Statistics Service. Recent weather has stimulated increased activity of the European corn borer, emergence of corn rootworms and evidently reproduction by soybean aphids. Densities of aphids appear to have increased to action thresholds in some fields despite the intense heat and the late stage of soybean growth.

Alert

Corn earworm – Significant flights were registered at 12 of 16 pheromone trapping sites during the last reporting period, indicating corn earworm moths may be laying enough eggs to warrant treatment in some fields. If left uncontrolled, as few as 25 moths are required to lay eggs on every ear in an acre of sweet corn (Foster and Flood 2005 *Vegetable Insect Management with Emphasis on the Midwest*). An insecticide should be applied and reapplied every 2-5 days or every 100 GDD to sweet corn in a vulnerable silk stage, until silks turn brown.

Pheromone trap counts for the period of July 28-August 3 were: Cashton 10, Chippewa Falls 76, Coon Valley 69, Evansville 100, Hancock 168, Janesville 2, Lancaster 150, Manitowoc 86, Marshfield 155, Mazomanie 189, New Richmond 12, Sparta 47, Rochelle 37, Sturtevant 197, Sun Prairie 154, and Wausau 3.

Corn earworm catch at Mazomanie Krista Hamilton DATCP

Looking Ahead

Corn rootworm – Populations were moderate to very high in southern and west central fields checked as part of the annual survey for corn rootworm beetles. In some fields, treatment is justified based on the number per plant and the extreme degree of silk clipping observed. Susceptible fields, including late-planted sweet corn and fields with fresh silks should be checked next week for the presence of beetles and silk feeding. The action threshold is five beetles per plant when silk clipping is observed as long as pollination is not complete. Additionally, preparations should be made to scout fields three times at 7-10 day intervals from next week though early September to estimate rootworm beetle populations and the potential for damage to next year's corn.

Dingy cutworm – Unusually high captures of 224 and 354 moths were documented at the Wausau and Marshfield black light trapping sites during the last reporting period, signaling the potential exists for high larval populations to develop in forages and other susceptible plants later this month. Although dingy cutworms are one of the more common cutworm species, they seldom reach destructive levels in Wisconsin. Damage to corn following sod or forages is frequently reported in outbreak years. Dingy cutworm is very resistant to drought, which may have something to do with its unusual abundance in north central Wisconsin this season. Some host plant species are alfalfa, apple, bean, bluegrass, cabbage, celery, chickweed, clover, corn, cucumber, lettuce, melon, mullein, onion, pea, plantain, potato, raspberry, rye, squash, strawberry, tobacco, and tomato. No economic threshold has been established for this species.

European corn borer – Egg laying by the second flight of moths is underway in susceptible crops throughout the state. Based on growing degree day accumulations, peak emergence of moths should have occurred in parts of the southern, west central, and central districts where1,733 GDD were reached in the past week. The treatment period for second generation corn borers extends from 1,550-2100 GDD. Scouting and control decisions should be made in the week ahead.

Western bean cutworm – Pheromone traps captured fewer moths this week compared to last, but flight activity is still in progress. The highest captures of the week were registered at Coon Valley 62, Cashton 38, Sparta 26, and Tomah 40. At this time, young western bean cutworm larvae are likely to be detectable in developing corn ears in fields throughout the southern half of the state. Although no official sightings have been reported yet this season, we anticipate the finding of larvae in fields later this month.

Soybean aphid – Fields should be checked one more time in the next week to determine if the action threshold of 250 aphids per plant has been exceeded. Populations have continued to build to economic levels in some Dane, Dodge and Jefferson Co. fields despite the intense heat. Sprays applied at R4-R5 may offer some yield protection, but treatment beyond R5 is not advised.

Insect Migration into Midwest Forecast

The following insect migration forecast was developed specifically for migration of corn earworm (CEW), but is applicable for all other migratory insects in the Midwest as well, such as the potato leafhopper and armyworm. Forecasts and maps are provided by Mike Sandstrom and Dave Changnon, Department of Geography, Northern Illinois University DeKalb, IL 60115

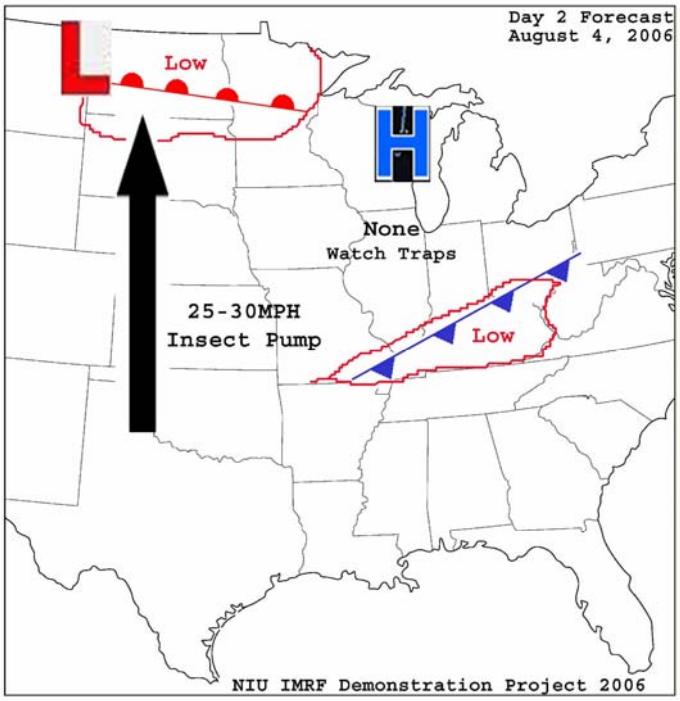
SHORT-TERM (DAY 2 FRIDAY, AUGUST 8 NOON TO SATURDAY, AUGUST 5 NOON):

Relative Risk of Insect Migration into the Midwest: LOW

(10-15%) – greatest risk area is along and south of the Ohio River in Kentucky, with a secondary risk area along and north of US 12 and west of I-35 in North Dakota and northwestern Minnesota.

The cold front currently cutting the Midwest in half from southwest to northeast will continue to move south, reaching the Ohio River and points south through this forecast period. Precipitation is expected to be limited to areas along and south of the Ohio River, so a high end Low risk of insect migration is forecast for Kentucky.

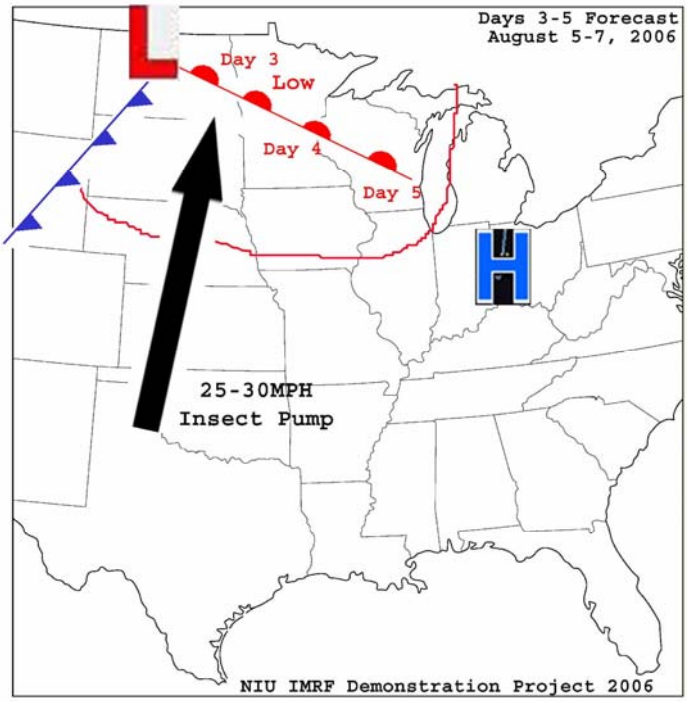
Another insect migration risk area is expected to develop across the far northwestern Midwest by the Day 2 period as a low pressure area begins to form across eastern Montana with an associated warm front draped east of the low through southern North Dakota into northwestern Minnesota. Relatively strong low-level southerly winds are expected to develop across the Plains west of the Missouri River by Friday night, and scattered precipitation (potential insect drop zones) may form across North Dakota and move into northwestern Minnesota by Saturday morning. A Low risk of insect migration is forecast across this area. Elsewhere across the northern Midwest, a weak area of high pressure will briefly dominate the weather pattern across the Great Lakes region, so no risk of insect migration is forecast across this area.



LONG-TERM (DAYS 3 TO DAY 5 – SATURDAY, AUGUST 5 NOON TO MONDAY, AUGUST 7 NOON):

Relative Risk of Insect Migration into the Midwest: LOW (10-15%) – greatest risk area is along and north of I-80 and west of Lake Michigan, including the Dakotas, northern Nebraska, northern Iowa, northern Illinois, Minnesota, and Wisconsin.

The developing low pressure over the Dakotas will slowly move to the east or northeast through the Day 3-5 forecasting period, with a trailing cold front also moving east to the south of the low pressure area. Ahead of the front in relatively strong low-level southerly winds, precipitation may develop in at least a scattered fashion especially during the late afternoon into evening hours. Only a Low risk of insect migration is forecast at this time due to uncertainty in the strength of the low pressure area and resultant coverage of precipitation. We will review data sources tomorrow and adjust the forecast if necessary tomorrow. The insect migration risk area will shift to the south/east through the period, with the greatest risk between I-29/I-35 on Day 3, along the I-35/Mississippi River area on Day 4, and then closer to Lake Michigan by Day 5, all north of I-80.



Corn

Variant western corn rootworm – Corn rootworm larvae are best known for their adherence to a strict diet of corn roots, causing considerable economic damage to the corn crop annually. Each May, larvae from overwintered eggs hatch in corn fields, feed on corn roots through June and July, and begin emerging as adults in early July. Knowing the nutritional requirements of their progeny, typical corn rootworm beetles deposit eggs in **corn** fields based on the instinctive assumption that where corn is growing this season, there's sure to be corn next season. This behavior provides plenty of roots for their soil dwelling offspring when corn is replanted to corn.

Farmers know this about corn rootworm beetles. For years they have rotated corn fields with heavy rootworm pressure to soybeans, alfalfa, or any other crop to prevent rootworm damage. Until the Variant Western Corn Rootworm (VWCRW) beetle came along, this control strategy was effective. In contrast to conventional corn rootworm beetles, the Variant WCRW lays eggs in **soybean** fields, sometimes resulting in economic injury to first-year corn when corn is planted the next season. The Variant WRCW has, in effect, outsmarted the traditional corn-soybean rotation. The Variant is indistinguishable from regular WCRW in appearance and there are no known methods available to separate the types.

The distribution of Variant WRCW in Wisconsin is not statewide. It appears to be limited to southern and west central regions for now, although its range is expanding. In 2003, the Variant Western Corn Rootworm Monitoring Network detected variants in Kenosha, Racine and southern Walworth Cos. By 2004, variant distribution shifted westward into Rock Co., and in 2005 it was found in Dodge Co.

DATCP survey specialists are participating in the 2006 Variant CRW Monitoring Network survey by trapping 21 soybean fields in Columbia, Dane, Dodge and Jefferson Cos. The Network soybean scouting protocol uses 12 yellow sticky traps evenly spaced throughout the soybean field to be rotated to corn. Traps are set during the last week of July and are checked once a week for four weeks. Each week, total western corn rootworm beetle counts are recorded from each trap and traps replaced. At the end of the sampling period, the average number of beetles per trap is calculated. An average of five beetles per trap per day (5 B/T/D) over the August sampling period has been shown to result in economic root injury to corn planted in the same field the next season. Readers can look for results of 2006 trapping efforts in the fall summary issue of the Wisconsin Pest Bulletin.

Western corn rootworm beetle Krista Hamilton DATCP

European corn borer – Moth flight activity, as documented in black light trap catches, increased in the past week. Thirteen trapping sites reported counts ranging from 0-159 moths for the period of July 28 to August 4, with the highest counts registered at Rochelle, Illinois. Wisconsin counts were considerably lower, ranging from 0-40 moths. These captures represent the peak of the second moth flight, at least according to the degree day model for European corn borer which forecasts concentrated flight activity around 1,733 GDD. Based on survey estimates of first generation borers, there exists a good chance for high populations of second generation borer to develop in some areas. The treatment window for second generation corn borer remains open until about 2,100 GDD or roughly August 7 near La Crosse, August 9 near Beloit and Eau Claire, August 15 near Madison and Hancock, and August 25 near Wausau.

Corn earworm – Several pheromone trapping sites documented the start of the major moth flight in the last reporting period. Sturtevant registered the highest capture of 197 moths on the night of August 2, while Mazomanie was in close second with 189 moths, and Hancock in third with a capture of 168 moths. Other weekly captures were: Cashton 50, Marshfield 155, Sun Prairie 154, Lancaster 150, Evansville 100, Manitowoc 86, Coon Valley 69, Chippewa Falls 76, Sparta 47, Rochelle 37, and New Richmond 12. Captures of this magnitude indicate that corn earworm moths may be laying enough eggs to warrant treatment in some fields. Fields should be checked closely in the immediate future and an insecticide applied and reapplied every 2-5 days or every 100 GDD on sweet corn in a vulnerable silk stage, until silks turn brown. For earworm control recommendations visit http://cecommerce.uwex.edu/pdfs/A3655.PDF. .

Corn rootworm – A statewide survey of corn rootworm numbers should be complete by August 18, and after that survey is analyzed the full extent of the present infestation should be known. Preliminary observations indicate that populations are relatively high in parts of the southern and west central districts. Many corn fields in the southern half of the state have more than one beetle per plant, but fields with green silks have up to 10 beetles infesting the silks alone. Some of the highest populations were observed in Dane and Jefferson Co. fields where counts averaged 3.0-5.6 corn rootworm beetles per plant. A count of just 0.75 beetle per plant is widely considered to indicate the potential for larval injury if the field is replanted to corn next year.

Northern corn rootworm beetle Krista Hamilton DATCP

Corn silks clipped by corn rootworm beetles Krista Hamilton DATCP

In Richland, Vernon, and Iowa Cos. surveys in the past week found corn rootworm beetle populations ranged from 0.3-4.8 per plant (averaging 2.0 per plant), and in Grant Co. populations ranged from 0.4-1.2 beetles per plant (averaging 0.9 per plant). Extensive silk clipping was evident in about 20% of the fields.

In the west central district, some La Crosse Co. fields had populations ranging from 0.7-3.5 beetles per plant (averaging 1.8 per plant). One heavily-infested field near Rockland in eastern La Crosse Co. had 80% of the silks clipped to 0-5%. The clipping appeared to have occurred too late to impair pollination, but was alarming nonetheless. Surveys in Trempealeau Co. fields found 0.6-1.8 beetles per plant (average 1.2 per plant), while Jackson and Monroe Co. fields had 0.9 beetles per plant. The northern species seemed to predominate in the west central district, judging from preliminary surveys.

In the week ahead, begin a three-part scouting regimen to assess this season's beetle population and the potential for larvae injury to corn roots next spring. Plant to check fields once next week, then two more times at 7-10 day intervals before mid-September. Examine 50 plants and record the average number of beetles per plant during each scouting trip. If the economic threshold of 0.75 beetle per plant (38 beetles per 50 plant) is exceeded during any one of the three samplings, consider treating with a soil insecticide or planting a transgenic rootworm hybrid next spring.

Northern corn leaf blight – This foliar disease is building up on some corn fields in some southern Wisconsin fields. It was particularly severe in fields examined near Mazomanie in western Dane Co. The diagnostic symptom of northern corn leaf blight is the large, elongate lesions that appear on corn leaves. This disease has the potential to increase late in the growing season on some corn varieties.

Western bean cutworm – Declining trap counts at most trapping sites in recent days signal that egg laying has slowed, and the population is transitioning into the larval stages. (In contrast to the general trend toward decreasing activity, traps in La Crosse and Monroe Cos. only registered peak flight activity in the past week.) By now, young larvae should be large enough to be easily seen in corn ears. Continue checking corn fields for western bean cutworm eggs and larvae in the week ahead and consider insecticide treatment only when 8% of the plants have egg masses on the leaves or young larvae feeding in tassels. High pheromone trap catches for the period of July 27-August 3 were: Cashton 38, Coon Valley 62, Mt. Sterling 55, Tomah 40, and Sparta 36.

Soybeans

Soybean aphid – Preliminary results of the annual soybean aphid survey indicate aphid populations did not build to economic levels in most Wisconsin fields in 2006. Just 14% of the 161 fields examined averaged more than 100 aphids per plant, 4% averaged more than 250 aphids per plant, and 1% averaged more than 1,000 aphids per plant. A total of 65% of the soybean fields examined were at R2 (full bloom), 19% were at R3 (beginning pod), and 16% had reached R4 (full pod). Soybean aphid densities recorded this season are comparable to 2005 in most districts, higher than those documented in 2004 (the lightest aphid year on record), and considerably lower than the aphid densities recorded in 2003. Survey results may change slightly as more data points are added, and averages will not be finalized until the remaining fields are surveyed in the northwest and west central districts. See page 11 for preliminary survey findings by statistical reporting district.

Corn Earworm Pheromone Trap Counts

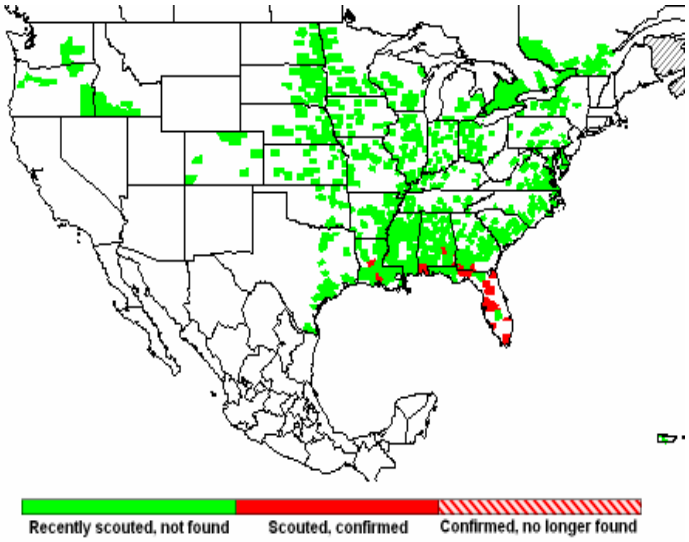
	28-Jul	29-Jul	30-Jul	31-Jul	1-Aug	2-Aug	3-Aug
Southwest							
Lancaster							150
South central							
Mazomanie							189
Rochelle, IL							37
Sun Prairie							154
Evansville						50+	50+
West Arlington							
Southeast							
Sturtevant							197
Janesville	0				1	1	
West central							
Sparta			11			36	
Coon Valley					6	11	52
Cashton		10					
New Richmond							12
Chippewa Falls							76
Central							
Wausau			0				2
Hancock						90	78
Marshfield				21			134
East Central							
Manitowoc			15			71	

Aphid densities have increased during the past week and the action threshold of 250 aphids per plant has been surpassed in more fields. Scouting is strongly advised in the week ahead while many fields are at R4-R5. It is important to recognize that the benefits of insecticide treatments for aphid control begin to decline after R3, so decisions to treat must be made soon. Look for complete soybean aphid survey results in the August 11 issue of the Wisconsin Pest Bulletin.

Bean leaf beetle – No more than 15% defoliation by first generation bean leaf beetles was observed in R4-R5 stage soybean fields in the south central and west central fields surveyed. Adults were common in low numbers, and no pod damage was evident in any of the fields. Be alert for pod feeding and clipping as the second, more damaging generation of beetles begins to emerge later this month.

National Soybean Rust Commentary (August 1, 2006) - Soybean rust has been found in two sites in Jefferson County, SW Mississippi. Rust was confirmed on both kudzu and soybeans in that county. This is the first report of rust from

Mississippi in 2006. Please consult the appropriate state commentary for more information. Currently rust has been found on this year's soybeans in eight different counties in five states (AL,FL,GA,LA,MS), the rest of the finds have been on kudzu. A total of 28 counties have reported rust this year and include five in Alabama, 13 in Florida, five in Georgia, three in Louisiana, one in Texas, and one in Mississippi. Spore trapping continues throughout the U.S. using both active and passive traps. Any positive spore trap information does not imply infection has taken place and plant samples are used exclusively for recording positive rust occurrence. Dry to very dry conditions have prevailed in the spore source regions and movement to new areas has been slow. Please consult your state commentary for more detailed information about conditions in your state. (Information from http://www.sbrusa.net/)



Fruit

Apple maggot – Another round of apple maggot flies emerged near the Deerfield, Dodgeville, Hixton, Richland Center, Rochester, Sheboygan, and Stoughton trapping sites, following the rains this week. The highest average capture of seven flies on an unbaited red ball trap was reported from Dodgeville, while the action threshold of one fly per unbaited trap or five flies per baited trap was exceeded at four of the 28 reporting orchards. If soil moisture stays adequate during the month of August, more flies are likely to emerge. Cooperators are urged to monitor traps for apple maggot activity through early September.

Codling moth – Apple insect trapping reports since the second flight of codling moths began last month indicate wide differences in codling moth pressure among Wisconsin orchards this season. Orchards that have no other codling moth hosts nearby continue to register few or no moth captures. At the opposite extreme, orchards with organophosphate resistance or other causes of inadequate first generation control have drawn high numbers, such as 49 moths this week near Gays Mills. Treatment for codling moth should be considered whenever the action threshold of five moths per trap per week is exceeded. Twelve of the 28 trapping sites (43%) reported above-threshold codling moth counts from July 28 to August 3.

Vegetables

Squash vine borer – Reports of moth activity in western Dane Co. signal gardeners should begin watching for larval feeding injury to zucchini and cucumber. Squash vine borer attacks generally weaken and stress plants, and sometimes cause sudden wilting. The severity depends on the number of borers and their location within the plant. In extreme cases, over 100 larvae have infested a single plant.

To diagnose squash vine borer infestations, look for the borer entry point into the stem, often where yellow granular or sawdust-like 'frass' is exuded. If a plant wilts but there is no evidence of borer activity, other possible causes are root feeding by cucumber beetle larvae or a bacterial wilt infection. The best way to reduce the chance of future squash vine borer infestations is to destroy vines soon after harvest to kill any larvae still inside stems, and disk or plow the soil in fall or spring to destroy overwintering cocoons.

Squash vine borer bugguide.net

Onion thrips – Populations of this important annual pest of onion are building rapidly with the hot dry weather across most of the state. Besides onions, this thrips species prefers cauliflower, cabbage, snap beans, cucumbers, melons, and tomatoes.

Damage to onions by thrips is caused primarily by their rasping feeding as they 'saw' through the leaves. The result is whitish blotches on the leaves. Both adults and larvae cause damage. Eventually the affected areas become dry and yellow. Heavy thrips infestations can cause leaf tips to turn brown. On kraut cabbage, feeding damage causes brown flecks on the internal tissues making the head unusable.

Thrips prefer tight places so the best place to find them is in the neck of the onion. They also prefer cabbage with tight heads. Heavy thrips injury on cabbage can cause distorted heads. Damage to cauliflower can cause tan or brown streaks on the curd and damaged curds are more susceptible to soft rot organisms.

Because of their tiny size and reclusive habits, they are difficult to control. No treatment thresholds have been

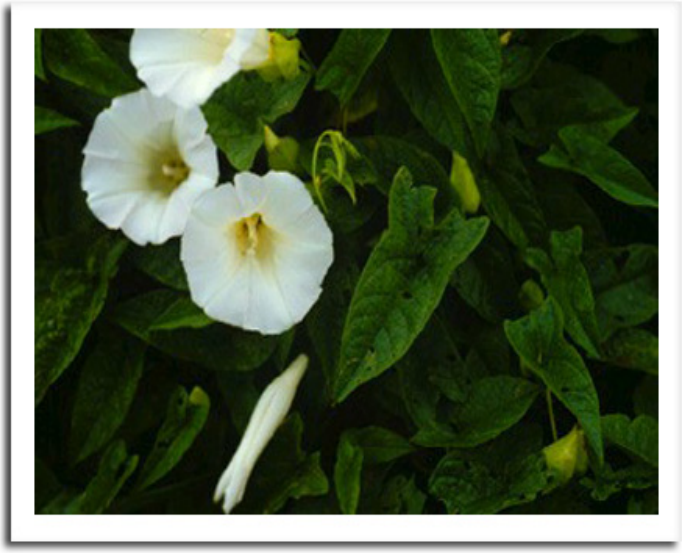
established for onions or cabbage. Yellow sticky traps may be used along field edges to monitor the initial migration of thrips into a field. *-- Karen Delahaut, Fresh Market Vegetable Program Coordinator*

For more information on onion thrips visit:
http://s142412519.onlinehome.us/uw/pdfs/A3721_e.PDF

Onion thrips www.nysaes.cornell.edu

Weeds

Although field corn has grown to great heights this season and most weed species are no longer visible beyond field borders, surveys this week found some persistent competitors and others that stretch even taller than the corn. Species observed in southwestern Wisconsin corn fields include giant ragweed, yellow foxtail, velvetleaf, and hedge bindweed. One Grant Co. field had an extensive distribution of hedge bindweed that wrapped around and between corn plants. Bindweed not only disrupts healthy corn growth, but long twining vines also create problems at harvest when they become entangled in field equipment.



Hedge bindweed www.ppws.vt.edu

Hedge bindweed (*Calystegia sepium* or *Convolvulus sepium*) - Hedge bindweed is a rhizomatous perennial with long vine-like stems and distinct leaves and flowers. It reproduces by rhizomes and seed. Few seeds are produced per plant, but rhizomes and easily spread on farm equipment and during cultivation. Similar looking species include wild buckwheat and field bindweed.

Wild buckwheat (hedge bindweed look-alike) www.oregonstate.edu

Forest and Landscape

White pine blister rust (*Cronartium ribicola*) – White pine blister rust was found on white pine in Sawyer Co. This fungal rust disease is found throughout the northern hemisphere. It causes cankers on white pine, which kill branches and girdle trees. This disease requires an alternate host, *Ribes* species (currant and gooseberry), to complete it's life cycle.

The life cycle begins in midsummer when basidiospores from *Ribes* land on pine needles, germinate and enter through the stomata. In autumn a yellow to reddish spot occurs on the needle at the site of infection. These infected needles often drop, but not before the spores grow hyphae into the twigs. The twigs then become infected, while the fungus is growing in the living bark and outermost sapwood. From here infection progresses along stems. The infected bark swells and in young bark has a yellowish margin, while in older bark the margins are indistinct. In the spring of the second year of infection aeciospores are produced and are wind-blown to re-infect *Ribes*. The spores on the *Ribes* grow rust over the summer, which then infect the pines in late summer, completing the cycle.

When the pines are re-infected in late summer they grow cream-colored blisters which push through the diseased bark. These blisters then break open and release orange-yellow spores. White remnants of the blisters persist for several weeks and bark in these regions will die shortly after. In late summer the blistered area of bark produces drops of sticky, yellow-orange fluid that later hardens and turns black.

To treat this, disease infected branches may be pruned out, removed, and destroyed. Avoid planting white pines where alternate hosts are found. If you do plant in these areas,

remove all *Ribes* within a mile, depending on air currents. Also avoid planting pines in areas where cool, moist air collects, such as the base of a slope or in a depression.

White pine blister rust on currant (Ribes spp.) www.forestryimages.org

Bronze birch borer (*Agrilus anxius*) – Borers were found on whitespire birch in St. Croix Co. This native beetle is found throughout the North American birch range. All birch varieties are susceptible to this borer.

This insect overwinters as a larva just inside the bark, between the xylem and phloem. When sap flow begins in the spring, the overwintered larva feeds, molts, pupates, and emerges as an adult. The adult borer chews a D-shaped exit hole in the bark to escape. This is a positive means for identification. Adult emergence typically begins in June and lasts approximately 6 weeks. The period of flight, mating, and egg-laying lasts until mid August. When the eggs hatch, larvae bore directly into the bark and begin feeding and creating galleries that run in serpentine tunnels throughout the bark. The larvae typically require two years to complete their life cycle and will produce a gallery approximately 30-50 inches long. These galleries basically girdle the trunk or branch of the tree.

Successful larval development depends upon the host being in a weakened or stressed condition. Symptoms of borer presence include chlorotic leaves and sparse foliage. Increased adventitious growth in the lower crown and twig dieback in the upper crown are also symptoms. If the tree is healthy, it can often heal around the galleries, creating swollen or lumpy areas on the trunk. The best treatment for bronze birch borer infestation is to maintain overall tree health. Water and fertilize whenever necessary.

Other nursery inspection finds this week include:

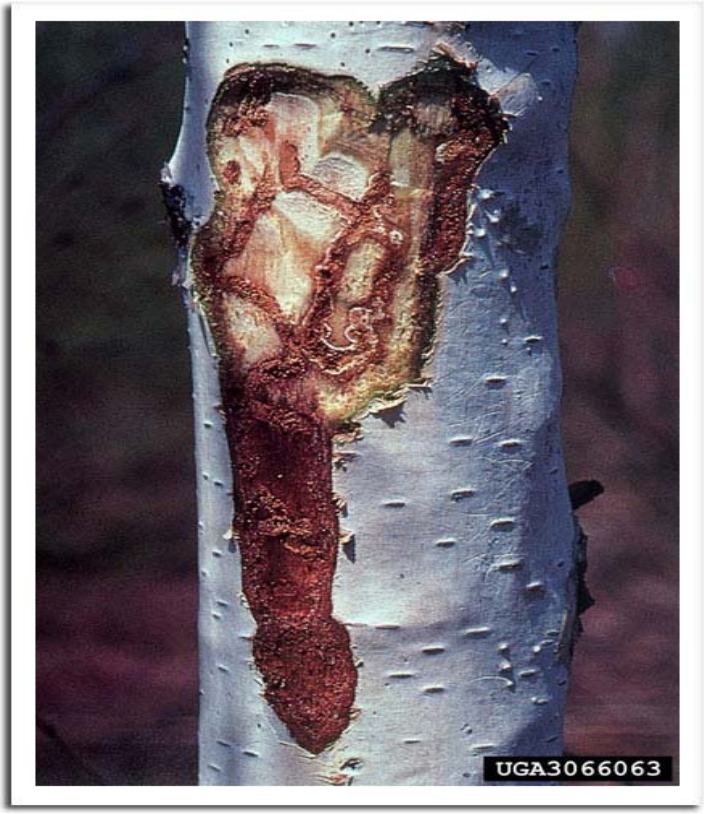
Southwest region: Unknown virus on azure monkshood, powdery mildew on lilac, fletchers scale on yew, phyllosticta on clump birch, pseudomonas tip blight on fragrant sumac, and ash flower gall mite on green ash in Iowa Co.

Southeast region: Septoria on serviceberry, guinardia on horse chestnut, ash plant bug on purple ash, phomopsis on arborvitae, phyllosticta on weigela, tent caterpillar on aspen, cedar quince rust on hawthorn, tarspot on Norway maple, and nipple gall on hackberry in Waukesha Co. Powdery mildew on columbine, septoria leafspot on variegated dogwood, black spot on roses, apple scab on ornamental crabapple, anthracnose on green ash, dothistroma blight on Austrian pine, and cedar hawthorn rust on downy hawthorn in Washington Co.

Central eastern region: Potato leafhopper damage on maple, shothole disease on prunus in Winnebago Co.

Northwest region: Spruce needle drop and rhizosphaera on white spruce in Sawyer Co. Leaf-curling aphid on patmore ash, leafhopper tip burn on amur maple, eastern spruce gall adelgid on Norway spruce, bullet galls on bur oak, and black knot on Canada red cherry in St. Croix Co.

Bronze birch borer with D-shaped exit holes www.forestryimages.org



Bronze birch borer larval galleries on birch www.forestryimages.org

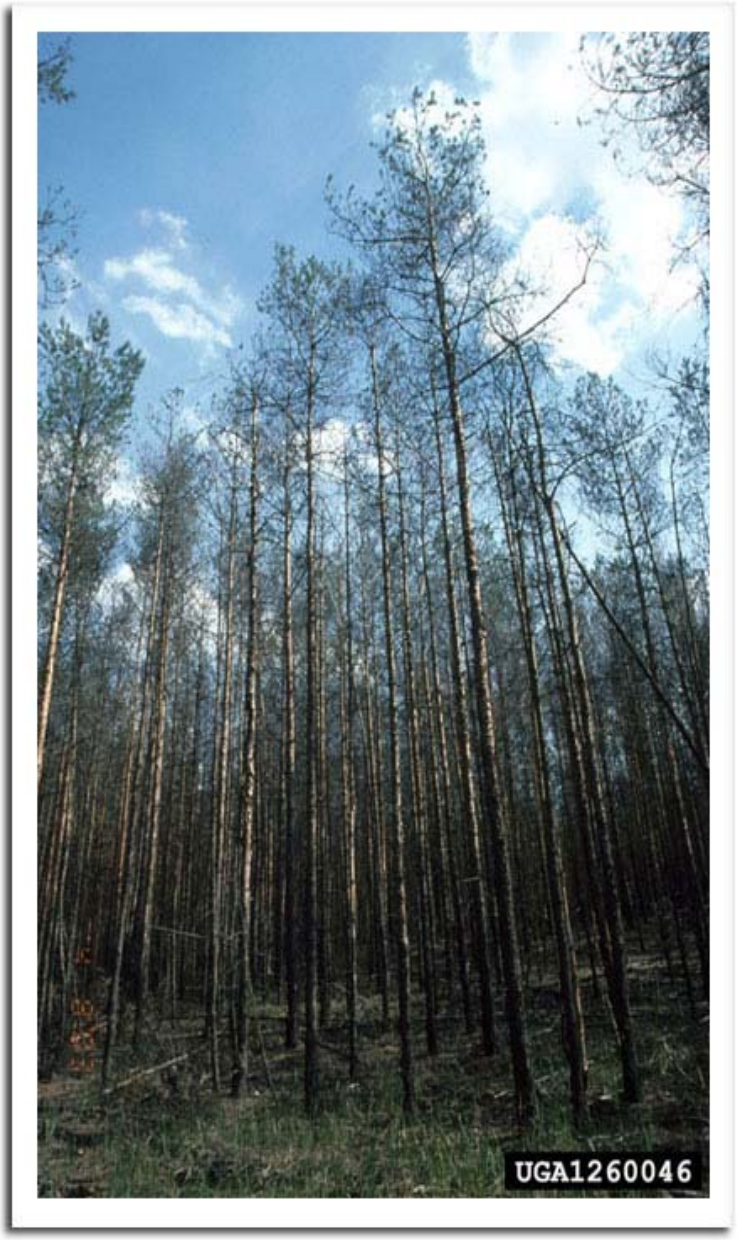
Exotic Pest of the Week

Nun moth (*Lymantria monacha* (Linnaeus) - The nun moth is a common forest pest throughout much of Europe and Asia that defoliates a wide range of conifers and hardwoods. It is not known to occur in North America. Even more destructive than its well known cousin the gypsy moth, the nun moth could affect 172 million acres in the United States if it would become established. Unfortunately the entry potential is considered to be high. The female nun moth can lay her eggs in the crevices of pallets, containers and ships.

Nun moth larvae feed mainly on conifers (*Picea, Pinus, Abies*, and *Larix* spp.), but will also feed on deciduous trees and shrubs (*Fagus, Carpinous, Betula,* and *Quercus* spp.). The caterpillar is similar to the gypsy moth in that it is very hairy, but is differentiated by the white patches on each side of their back near the head and the light patch in the middle of the back (see Nun moth larva photo). The forewings of adult nun moths can vary from white with numerous dark transverse wavy lines and patches, to dark brown with black flecks (see Nun moth adult photos).

Male nun moth dark morph www.forestryimages.org

Nun moth larva www.forestryimages.org



Nun moth defoliation www.forestryimages.org

Hind wings are generally gray-brown with minute dark or light patches, or both, at the edge. The nun moth female has a wingspan of 1.77" to 2.17", and the male, a wingspan of 1.38" to 1.77".

Adult nun moths fly from the middle of July to the beginning of September, and are the most active late at night. Both the male and female moths can fly, but the females usually remain on the tree trunks. Females lay one or more clusters of approximately 40 eggs in the crevices of bark or lichen. Larvae usually hatch in early May and go through 5-7 instars before pupating in July.

To report a possible Nun moth find, or any other exotic pest find, please call the Wisconsin Department of Agriculture, Trade and Consumer Protection Pest Hotline at **1-800-462-2803.**

Weekly Apple Insect Trap Counts (July 28 – August 3, 2006)

County	Site	Date	STLM[1]	RBLR[2]	CM[3]	OBLR[4]	AM red[5]	AM yellow[6]
Bayfield	Atkins	7/25-7/31	0	0	0	1	1.3	1
Bayfield	Gellerman	7/24-7/31	7	0	0	0	0	0
Bayfield	Olsen 1	7/28-8/3	549	0	1	4		
Bayfield	Olsen 2	7/28-8/3	28	0	2	5		
Bayfield	Lobermeier	7/28-8/3	10	33	0	2	0	0
Brown	Oneida	7/24-7/31	630	116	6	4	0	0
Crawford	Gays Mills	7/27-8/3	235	2	49	21	0	0
Dane	Deerfield	7/28-8/3	630	31	0	0	4	1
Dane	Stoughton	7/28-8/3	96	68	1	10	2	0
Dane	W Madison	7/25-8/3	80	58	8	1	0	0
Dodge	Brownsville	7/28-8/3	31	7	2	0	0	0
Fond du Lac	Campbellsport	7/28-8/3	30	20	8	10	0	0
Fond du Lac	Campbellsport	7/28-8/3	1	25	6	4	0	0
Grant	Sinsinawa	7/28-8/3	23	0	0	0	0	1
Green	Brodhead	7/28-8/3	0	32	8	9	0	0
Iowa	Dodgeville	7/28-8/3	129	23	12	3	7	0
Jackson	Hixton	7/28-8/3	117	0	1	0	0	1
Kenosha	Burlington	7/28-8/3	300	8	4*	3	0.6	0
Marquette	Montello	7/23-7/30	52	0	0	0	0	0
Marinette	Wauzaukee	7/28-8/3	116	0	3	3	3	0
Pierce	Beldenville	7/28-8/3	110	14	12	10	0	0
Pierce	Spring Valley	7/28-8/4	11	17	5	9	0	0
Racine	Rochester	7/28-8/3	50	0	6.22	0.5	0.9 unbait **	0
Racine	Raymond	7/28-8/3	675	14	2	1	0	0
Richland	Richland Center E	7/27-8/3	170	26	38	10	0	0
Richland	Richland Center W	7/27-8/3	125	44	6	13	2	0
Sauk	Baraboo	7/27-8/3	150	14	11	12	0	0
Sheboygan	Plymouth	7/28-8/3	95	90	9	2	6 baited	0
Waukesha	New Berlin	7/28-8/3	100	5	0	4	0	0

[1] Spotted tentiform leafminer; [2] Redbanded leafroller; [3] Codling moth; [4] Obliquebanded leafroller; [5] Apple maggot red ball trap;

[6] Apple maggot yellow sticky board

* High capture of 11 moths per trap **7 AM flies were captured on one unbaited red ball trap in wild trees

Weekly Black Light Trap Counts

	Date	BCW[1]	CabL[2]	CelL[3]	CE[4]	DCW[5]	ECB[6]	FA[7]	TA[8]	ForL[9]	SCW[10]	VCW[11]	AlfL[12]	WBCW[13]
Southwest														
Reedsburg	7-27 to 8-3	-	-	-	-	-	14	-	-	-	-	-	-	-
Lancaster	7-27 to 8-3	0	0	5	3	0		0	1	0	0	0	0	29
South central														
Mazomanie	7-28 to 8-3	0	0	11	0	23	20	0	12	0	0	0	0	28
W. Arlington														
Rochelle, IL	7-27 to 8-3	0	3	0	15	0	159	3	2	0	0	2	0	14
Southeast														
Janesville	7-28 to 8-2	1	0	36	2	0	21	0	16	3	0	0	0	2
East Troy	7-27 to 8-3	0	0	2	0	0	3	8	0	0	0	0	0	18
West central														
Sparta*	7-26 to 7-31	0	0	0	0	0	0	0	0	0	0	0	0	6
New Richmond	7-27 to 8-3	0	0	0	0	0	40	0	0	0	0	0	0	0
Chippewa Falls	7-28 to 8-3	0	0	0	1	8	10	0	0	0	0	0	0	0
Central														
Marshfield	7-27 to 8-3	0	0	9	7	354	40	0	22	0	4	18	0	39
Wausau	7-26 to 8-3	5	0	2	1	224	4	0	14	11	16	0	0	17
East Central														
Manitowoc	7-27 to 8-2	2	0	11	0	27	0	0	14	0	0	0	0	0

[1] Black Cutworm; [2] Cabbage Looper; [3] Celery Looper; [4] Corn Earworm; [5] Dingy Cutworm; [6] European Corn Borer; [7] Fall Armyworm; [8] True Armyworm; [9] Forage Looper; [10] Spotted Cutworm; [11] Variegated Cutworm; [12] Alfalfa Looper, [13]Western Bean Cutworm

*** Indicates trap malfunction during the week**

Preliminary 2006 Soybean Aphid Survey Results (R2-R4)

District	*Ave No. Aphids per Plant by District 2006*	*Ave No. Aphids per Plant by District 2005*	*Ave No. Aphids per Plant by District 2004*	*Ave No. Aphids per Plant by District 2003*	*No. Fields Surveyed 2006*	*No. Fields Surveyed 2005*	*No. Fields Surveyed 2004*	*No. Fields Surveyed 2003*
Southwest	**55**	*43*	*2*	*149*	**29**	*46*	*41*	*42*
South central	**30**	*75*	*12*	*1006*	**45**	*58*	*70*	*71*
Southeast	**28**	*89*	*6*	*1268*	**14**	*37*	*35*	*40*
Central	**55**	*207*	*37*	*680*	**10**	*23*	*24*	*23*
East central	**159**	*124*	*5*	*994*	**28**	*40*	*47*	*48*
West central	**112**	*198*	*9*	*633*	**31**	*34*	*35*	*28*
Northwest	**NA**	*305*	*2*	*566*	**NA**	*16*	*16*	*19*
North central	**NA**	*113*	*7*	*93*	**NA**	*15*	*13*	*10*
Northeast	**NA**	*42*	*20*	*170*	**NA**	*7*	*12*	*8*
Statewide Ave.	**65**	*133*	*11*	*618*	**157**	*276*	*293*	*289*

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Trade & Consumer Protection
Division of Agricultural Resources Management
PO Box 8911
Madison WI 53708-8911

Web Site of the Week

Tom Volk's Fungi Pages

We've long been fans of UW-La Crosse's Tom Volk and his wonderful web site for fungi, including the Fungus of the Month and some wonderful mycology images.

News is that Tom's just received a heart transplant--we wish him a speedy recovery, and we look forward to many more Fungi of the Month.

http://tomvolkfungi.net

Quote of the Week

Guard from rapacious worms its tender shoots,
And drive the mining beetle from its roots;
With ceaseless efforts rend the obdurate clay,
And give my vegetable babes to day!

--Erasmus Darwin (1731-1802)

EXOTIC Pest of the Week

Nun moth, *Lymantria monarcha* (Linnaeus)

August 04, 2006